

**Remarks**

This Amendment is in response to the Office Action dated **April 9, 2004**. Each issue is in the official action is discussed below.

***Objections***

The disclosure was objected to because of the certain informalities. In response, Applicant has amended the application to remove the asserted informalities.

Although Applicant disagrees with the objection, the specification has been amended to remove the asserted informality.

***§112 Rejections***

Claims 1, 9, 26 and 30-33 were rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement. It is asserted that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In claims 1, 9, and 26 "an overall basic pH", in claims 30 and 32 "high level of metals and minerals", and in claims 31 and 33 "does not produce.. .cblorine" lack clear antecedent basis in the specification as originally filed, and appear to be drawn to new matter.

Applicant disagrees. As to the claimed ph and the level of metals and minerals, these elements are inherent in cooling tower water and in the explanation of the workings of the invention treatment system throughout the specification. One skill in the art of cooling tower systems would know that these water conditions exist in cooling tower systems.

As to the level of chlorine product, once again, this is an inherent result of the workings of the invention treatment system described throughout the specification. Also, when describing the inventive water treatment system's use in treating water for poultry, it is pointed out that it is an improvement over prior systems because it is not necessary with the inventive system to add chlorine to treat the water, which is beneficial because poultry are repelled by the scent of chlorine.

For the above reasons, withdrawal of the rejection is requested.

***§103 Rejections***

Claims 1-10 and 26-33 were rejected under 35 USC §103(a) as being unpatentable over WO 98/31636 McKay in view of Jansen. It is asserted in the official action that McKay discloses the structure of the cooling and water treatment systems substantially as claimed. However, the reference differs in that McKay fails to recited a titanium electrode coated with ruthenium (actually Jansen teaches a mixture of ruthenium oxide and titanium oxide), but, it is asserted, Jansen discloses that it is known in the art to utilize a titanium electrode with an iridium or ruthenium coating in a system for disinfecting water and it would have been obvious to one skilled in the art to modify the system of McKay in light of Jansen.

Further to Applicant's Remarks dated 3-1-04, the rejection is traversed. Not only does the rejection fail due to insufficient motivation to make the combination, as described in Applicant's prior Remarks, it fails because, if the combination were obvious, one skilled in the art would have made the combination prior to Applicant's discovery, especially since the Jansen reference has been available since 1988 and the existence of cooling towers have been known for an even longer period. The rejection fails to take into account several factors discussed in Applicant's application which provide evidence of non-obviousness. The presently claimed invention provides for an invention which fills an unresolved need, that were it to be obvious would have been utilized prior to the inventors development.

The present invention has seen both economic and environment benefits, both powerful motivators when it comes to developing novel devices and methods. Prior methods of controlling fouling in cooling tower systems required (i) blow down, (ii) sanitary sewer or environmentally acceptable methods of discharging blowdown water or backwash water from side-stream filtration, (iii) expensive and time consuming additions of additives to control biofilm, scale, and corrosion, (iv) special procedures for the removal and disposal of sump sludge when potentially toxic compounds are precipitated as by-products of the chemical treatment to control biofilm, scale, or corrosion, and (v) the loss of thermal efficiency at both the waterside of the condenser and within the tower due to scale buildup. Even with inhibitors, periodic brushing of the condenser tubes and the tower surfaces was necessary to remove scale. When the method employed for the control of buildup of suspended solids is periodic blowdown, then the recurring buildup abraded the surfaces of the condensing loop piping, valves, pumps, and condensers decreasing their design life and increasing maintenance costs. The present invention provides a more efficient, economical and improved apparatus and method for the control of scale,

corrosion and biofilm in a water system using electronic oxidation and ionization with side-stream filtration.

The most significant effect of this invention is to eliminate all chemicals currently used for the control of fouling and for corrosion inhibitors. Additionally, this invention reverses and controls scale and reverses and controls corrosion by the electrochemical action of the ionic particles created in the electrode chambers by mineral ionization of the copper and the activated oxygen ions. Benefits, both economical and environmental are discussed in further detail on pages 21-25 of the specification.

The objective evidence of non-obviousness may be used to rebut a prima facie case of obviousness based on prior art references. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Objective evidence of nonobviousness may include commercial success, long-felt but *unsolved need*, and licenses showing industry respect. See *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. Secondary considerations such as ..... failure of others to invent are also relevant to the obviousness inquiry. *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 716, 21 U.S.P.Q.2d 1053 (Fed. Cir. 1991).

In the present case, an invention has been provided which addresses an industry need which has yet to be resolved. The competitive industry with the presently claimed invention addresses would have taken advantage of Applicant's novel invention had it been obvious. This is very important to note, especially in light of the tenuous nature of the value of the teachings of Jensen, as previously discussed.

Applicant has addressed and resolved a plethora of problems faced by those who use water systems to treat water for use with cooling towers. Because of these areas, if the invention were obvious, those skilled in the art would have taken advantage of it. Economics and environmental concerns dictate that an obvious solution would have previously been utilized. The present invention provides a more efficient, economical and improved apparatus and method which is non-chemical for these problems. The principles applicable to the process embodied in this invention have not previously been coupled together in the sequences and in combination with other methods to form a single method as is exemplified by this invention. As such, the benefit of protection should be provided.

The discussion not only includes significant environmental benefits, but also includes a telling experimental analysis illustrating the significant economic benefit, two areas

which provide those skilled in the art great incentive to exploit obvious improvement. However, they have not, evidencing the patentability of Applicant's claimed invention.

Although Applicant believes the present invention not to be simple, even "[a] simple invention may be patentable, even if the invention comprises the combination of features known in the art, provided the combination itself is not obvious. See *In re Spinnoble*, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969) ("A patentable invention, within the ambit of 35 U.S.C. §103, may result even if the inventor has, in effect, merely combined features, old in the art, for their known purpose, without producing anything beyond the results inherent in their use.") (emphasis omitted).

The obviousness analysis of the Office Action is also flawed in that it uses the invention as a 'roadmap'.

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious....[O]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1784 (Fed. Cir. 1992). In this competitive \$22 billion field, if Applicant's claimed invention were obvious, one skilled in the art would have previously taken advantage. Only in hindsight would one see the claimed invention obvious.

For the above reasons, Applicant asserts that the claimed invention is patentable over the cited prior art. Reconsideration is respectfully requested.

Claims 11 and 12 were rejected under 35 USC §103(a) as being unpatentable over WO 98/31636 McKay in view of Jansen and further in view of Humphrey et al.


Dependent claims 11 and 12 are not obvious in light of the cited references for the reasons stated above in regard to paragraph 5 of the official action, among others.

Applicant believes the claims to be in condition for allowance. Early and favorable action thereon is requested. If there are further issues to discuss, the Examiner is urged to contact the undersigned at 952-563-3008.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS

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By:   
William E. Anderson II  
Registration No.: 37766

6109 Blue Circle Drive, Suite 2000  
Minnetonka, MN 55343-9185  
Telephone: (952) 563-3000  
Facsimile: (952) 563-3001

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